

CLAIMS

1. Fluid product dispensing pump comprising a pump body (10), a pump chamber (20), at least a first piston (72) sliding in the said pump chamber (20) to dispense the fluid product, a dispensing orifice (45) and a closer (38) displaceable and / or deformable between a closing position of the dispensing orifice (45) and an open position of the dispensing orifice (45), characterised in that the said pump chamber comprises an inlet valve (70) separating the pump chamber (20) from a dip tube (18) extending to a reservoir (60) of fluid product, a bypass passage (74) being provided between the said dip tube (18) and the said pump chamber (20), the said bypass passage (74) being arranged upstream of the said inlet valve (70), the said bypass passage connecting the pump chamber (20) to the dip tube (18) when the pump is primed.

2. Pump according to claim 1, in which the pump body (10) is made in a single piece with the said closer (38).

3. Pump according to claim 1 or 2, in which the inlet valve (70) comprises a valve seat (71) fixed to

the first piston (72) and a valve element (75), the said first piston (72) sliding in a leak tight manner in the said pump body (10), the said pump body (10) comprising an opening (32) cooperating with the first
5 piston (72) at the time of priming to open the said bypass passage (74) and to enable air contained in the pump chamber (20) to escape through the dip tube (18) in the reservoir (60) before the pump is actuated for the first time.

10 4. Pump according to any one of the previous claims, in which the said pump comprises a dispensing head (40) incorporating the said dispensing orifice (45).

5. Pump according to claim 4, in which the said
15 closer (38) comprises a second piston (34) cooperating in a leak tight manner with the head (40) in any position, and a third piston (35) that can be moved with respect to the said head (40) between a sealed closing position and an open position, the said third
20 piston (35) separating the dispensing chamber (20) into two parts, a first part (21) of the dispensing chamber arranged between the closer (38) and the said third piston (35) and a second part (23) of the dispensing chamber arranged between the said third piston (35) and
25 the said second piston (34).

6. Pump according to claim 5, in which the said second part (23) of the pump chamber (20) is connected to the said bypass passage (74).

7. Pump according to claim 6, in which when the
30 third piston (35) moves to its open position during actuation in which it connects the said first and

second parts (21, 23) of the pump chamber (20), a part of the product contained in the said pump chamber (20) may be discharged through the said bypass passage (74) into the dip tube (18) and into the reservoir (60).

5 8. Pump according to claim 6 or 7, in which the second part (23) of the pump chamber (20) is connected to the said bypass passage (74) through a passage (33) provided between the said second and third pistons (34, 35).

10 9. Pump according to any one of claims 5 to 8, in which the said second and third pistons (34, 35) are made in a single piece.

15 10. Pump according to any one of claims 5 to 9, in which the said second piston (34) is made in a single piece with the said closer (38).

20 11. Pump according to any one of claims 5 to 10, in which the said closer (38) is elastically loaded particularly by a spring (50), towards its closing position and it is displaced and / or deformed towards its open position by pressure of the product contained in the pump chamber (20).

25 12. Pump according to claim 11, in which the closer (38) moves and / or deforms in the axial direction with respect to the said pump body (10), the said third piston (35) being moved into the open position from a predetermined axial displacement and / or deformation of the said closer (38).

13. Pump according to claim 3, in which the valve element (75) is a ball.

30 14. Pump according to any one of the previous claims, in which a single spring (50) tends to move the

said first piston (72) towards its rest position and the said closer (38) towards its closed position.

15. Pump according to claim 14, in which the said spring (50) is not in contact with the fluid product.

5 16. Pump according to any one of the previous claims, in which the said first piston (72) and the said valve seat (71) are made in a single piece with an attachment element (15) such as a snap fittable, crimpable or screwable ring adapted to fix the said
10 pump onto a fluid product reservoir (60).

17. Fluid product dispensing device comprising a fluid product reservoir (60), characterised in that it comprises a pump according to any one of the previous claims.